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(19) (CA) **CANADIAN PATENT** (12)

(54) Gutter Assembly

(72) Williams, Robert D. , Canada

(73) Same as inventor

(57) 4 Claims

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ABSTRACT OF THE DISCLOSURE

A gutter assembly with a leaf and pine needle guard for attachment along the roof edge of a structure. Mounting brackets are provided for securing the assembly to the structure along its length. The gutter assembly includes an elongated trough with a curved shaped elongated shed surface engaging the roof edge and having a plurality of longitudinally spaced rows of slots and interconnecting slits along its vertical portion. Each of the slots define therebetween a compound curved flange, its apex residing within the vertical plane of the water shed. The slots selectively allow the water to enter the trough position below while excluding pine needles, leaves and other debris from engagement within the gutter.

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The embodiments of the present invention in which an exclusive property or privilege is claimed are defined as follows: **1300338**

1. A gutter assembly in combination with a roof structure which includes a fascia board having a vertical outer surface and a roof deck inclined angularly towards the fascia board, said gutter assembly comprises an elongated trough portion and a water shed portion, a plurality of clips securing said assembly to said roof structure, said water shed portion comprises a convex shaped elongated portion engaging said shingles and extending to said trough portion, a plurality of longitudinally spaced rows of slots and interconnecting slits in said water shed portion, each of said slots defining therebetween a compound curved flange, the apex of said compound curved flange residing within the vertical plane of said water shed, a longitudinally extending recessed curved area between each of said rows defining a portion of said curved flange, means for interconnecting said water shed portion with said trough portion, a secondary space support extending from said fascia board having a angularly disposed member extending therefrom, attachment clips engaging said trough portion and said fascia board, means for inter-engaging said clip with said free end of said secondary space support.

2. The gutter assembly of claim 1 wherein said compound curved flanges extend inwardly to a point beyond a vertical plane formed by said longitudinally extending recessed curves between said rows.

3. The gutter assembly of claim 1 wherein said means for interconnecting said water shed portion with said trough portion comprises a compound flange having vertical and horizontal flange elements engaging an upper rolled edge of said trough portion.

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4. The gutter assembly of claim 1 wherein said means for inter-engaging said clip with said free end of said secondary space support comprises an elongated compound curved portion on the free end of an elongated angularly disposed member of said secondary spacer support.



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GUTTER ASSEMBLY

Background of the Invention

Technical Field:

This device relates to rain gutters in general and specifically to guards or screens that are used to restrict the access of the gutter to only water; eliminating the majority of debris, such as leaves, etc.

Description of the Prior Art:

Prior art devices of this type have relied on a variety of different structural variations to strain debris from the water entering the gutter system. See for example U.S. Patents 3,388,555 of June 18, 1968 to R.E. Foster, 4,497,146 of Feb. 4, 1985 to R.J. Demartini, 2,583,422 of Jan. 22, 1952 to J.E. Haddon, and 4,631,875 of Dec. 20, 1986 to C.D. Olson.

In U.S. Patent 2,583,422 a guard is disclosed having a gutter cover having a plurality of raised areas along its upper surface which are apertured therebelow thereby excluding debris from entering the gutter.

In U.S. Patent 3,388,555 a self-straining eave trough is shown having a curved upper portion and an integral gutter formed therebelow. A plurality of spaced tabs are cut into the lower area of the curved portion which allow for water to enter the



gutter while preventing debris from entering.

U.S. Patent 4,497,146 discloses hangers for rain gutters which extend from the roof line in a curved fashion down to and engage the gutter preventing debris from entering the gutter interior.

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Finally, in U.S. Patent 4,631,875 a gutter assembly is disclosed having a leaf guard that extends from under the shingles on a roof at the same angle to form a forward wall of a gutter portion with the angled portion having a plurality of slots which allow access of water, but keeps the debris from entering the gutter itself.

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Summary of the Invention

A gutter assembly to prevent leaves, pine needles and other debris from entering the gutter. The gutter assembly provides a vertically aligned apertured surface guiding the water into the gutter while diverting debris harmlessly away.

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Description of the drawings

Figure 1 is a perspective view of a gutter assembly on a structure;

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Figure 2 is a cross-sectional view of the gutter assembly in

Figure 1;

Figure 3 is an enlarged portion of the gutter assembly showing a plurality of shaped openings in the vertical surface;

Figure 4 is a cross-section on lines 4-4 of Figure 1; and

5 Figure 5 is a cross-sectional view of an alternate form of the invention.

Description of the Preferred Embodiment

Referring now to Figures 1 and 2 of the drawings a gutter assembly can be seen mounted to a portion of a roof structure 10
10 comprising a fascia board 11, a soffit 12 and a roof deck 13. A plurality of shingles 14 are overlappingly attached to the roof deck 13 as will be well understood by those skilled in the art. The gutter assembly is comprised of an elongated trough portion
14 that has a generally U-shaped configuration that extends along
15 the roof structure 10 just below the soffit 12. A plurality of attachment clips 15 are positioned in longitudinally spaced relation to one another along and to the fascia board 11 by fasteners F. Each of the attachment clips 15 are comprised of a horizontally
disposed base member 16 with an upstanding vertically aligned
20 right angularly extending attachment member 17 emanating from said

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base member. The attachment member 17 has an angularly disposed free end portion 18 that acts as a spacer support for the gutter assembly as will be described in greater detail later. The attachment member 17 is apertured midway along its length for acceptance of the fastener F to the fascia board 11. A convex shaped elongated water shed portion 19 extends from under the shingles 14 on the roof deck 13 outwardly and downwardly in a smooth continuous manner, as best seen in Figure 2 of the drawings. A plurality of longitudinally spaced openings in multiple row configurations, best seen in Figures 2, 3, and 4 of the drawings are formed in the vertical wall portion of said water shed portion 19 hereinbefore described. Each of the spaced openings is of a generally elongated or vertically aligned configuration having a transverse dimension one-third its height characterized by oppositely disposed vertical slots 20 and 21 interconnected by horizontally disposed slit 22 and are aligned vertically in staggered relationship to each adjacent row. Each of the rows of the spaced openings are defined by a longitudinally extending recessed curved areas at 23, 24, and 25 respectively. The remaining material between the slots 20 and 21 defines a compound curved flange at

26 the apex A of which falls within the vertical plane defined by the vertical portion of the water shed portion 19. The resulting spaced openings in multiple row configurations are highly convaluted and form in combination an elongated surface area that guides water from the shingles 14 around the convex water shed portion 19 and onto and around the compound curve flange 26 diverting and channeling the water into the trough portion 14. The lower horizontal edge of said vertical wall portion of said water shed 19 is defined by a right angularly disposed compound flange 27 having horizontally and vertical flange elements 28 and 29 to conform to and engage with an upper rolled edge 30 of the trough 14 abutting said base member 16 of the clips 15.

A secondary spacer support 31 is formed on the elongated angularly disposed member 32 extending from a vertical portion 33 abutting the fascia board 11 behind the space clips 15 positioned therealong. The beforementioned vertical portion 33 extends downwardly over and around said soffit 12 being held thereagainst by said space clips 15, best seen in Figures 1 and 2 of the drawings.

It will be evident from the above description that in use

the gutter assembly will effectively separate water from a variety of undesirable debris, such as leaves, pine needles, etc. thus keeping the trough 14 free and open reducing the need to clean out the trough periodically as is now required.

5 Referring now to Figure 5 of the drawings an alternate form of the gutter assembly can be seen comprised of a one-piece trough and water shed combination 34 secured to a fascia board 35 of a structure 36. In this form of the invention a continuous elongated water shed 37 is defined having a trough 38 integrally
10 formed therewith. The same multiple slot configuration is formed within the vertical portion of the water shed 37 as described above with a spike and furl 39 securing the assembly to the fascia board 35 as will be well known and understood by those skilled in the art.

15 Thus, it will be seen that a new and useful gutter assembly has been illustrated and described and that various changes and modifications may be made therein without departing from the spirit of the invention. Therefore, I claim:

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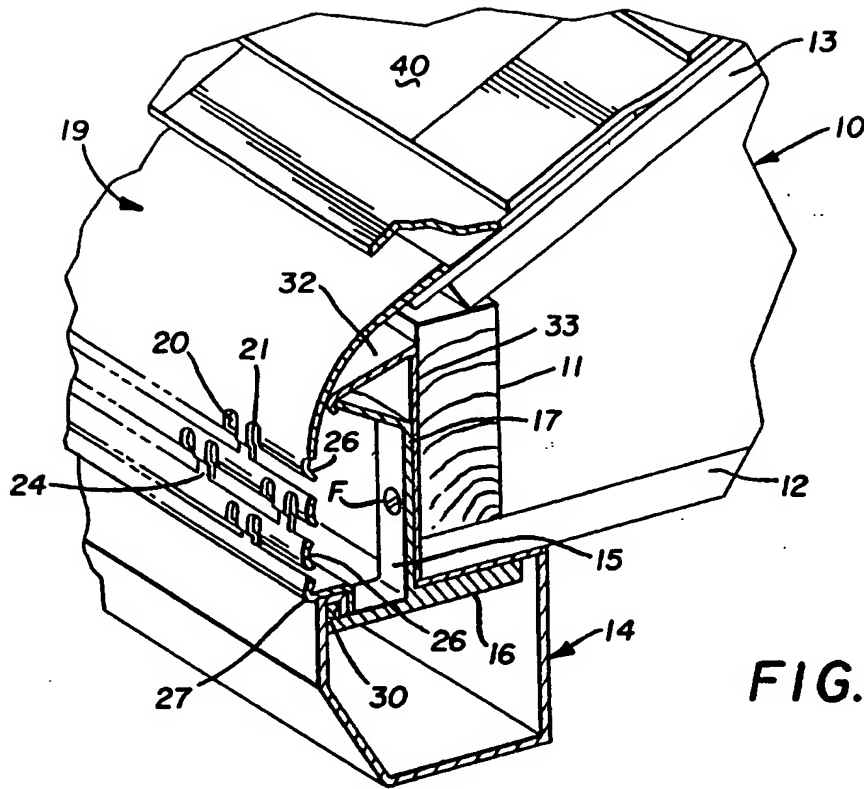


FIG. 1

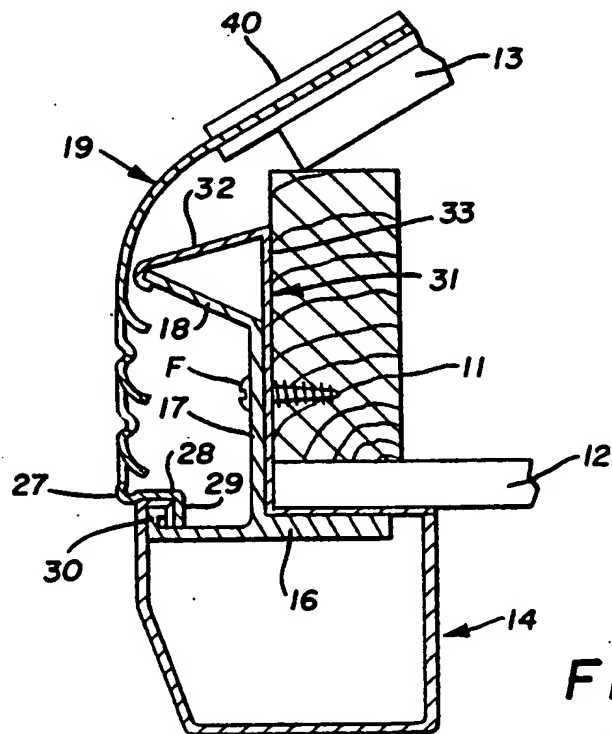


FIG. 2

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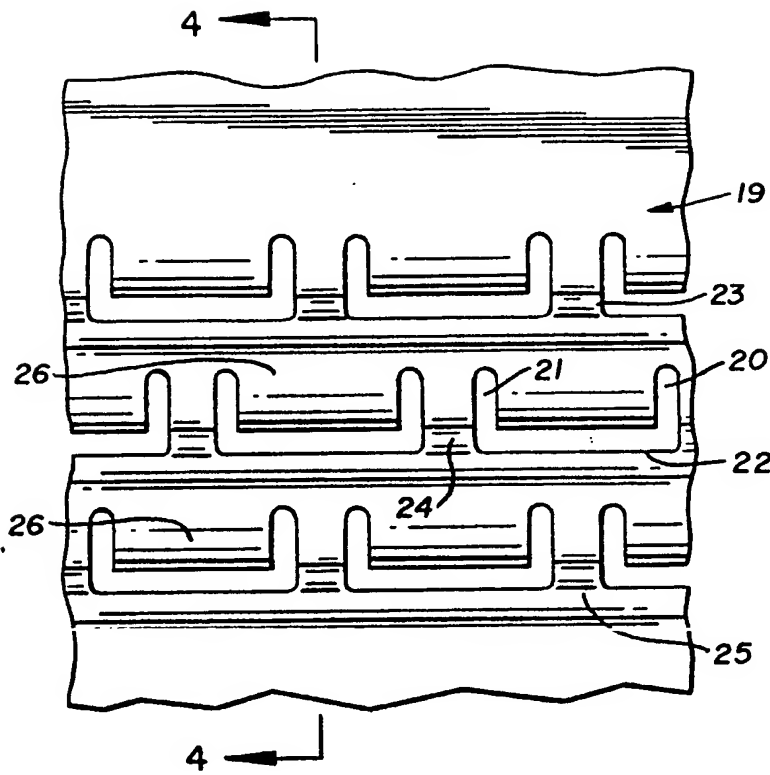


FIG. 3

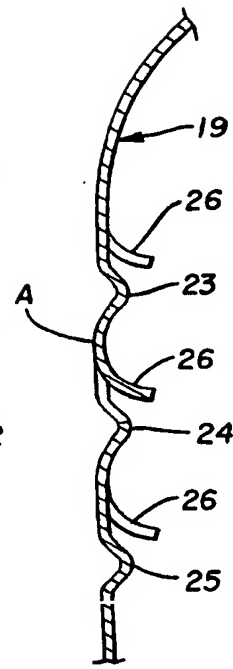


FIG. 4

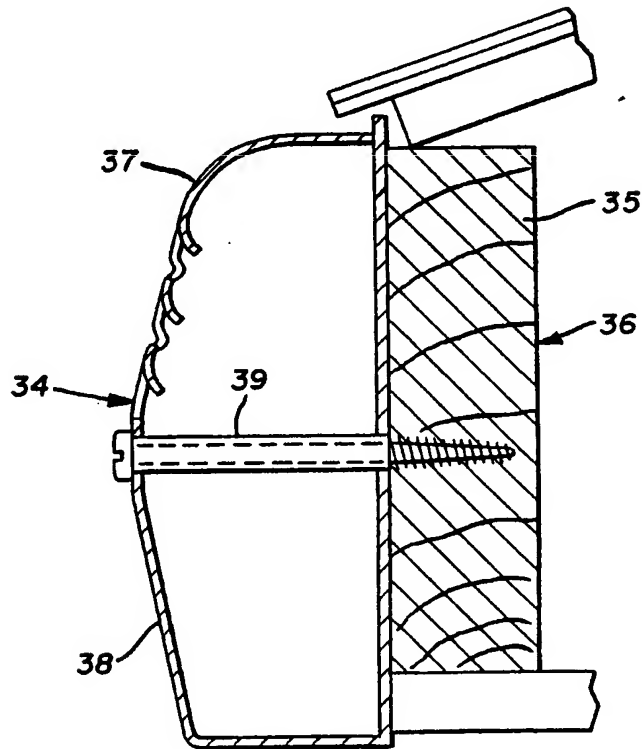
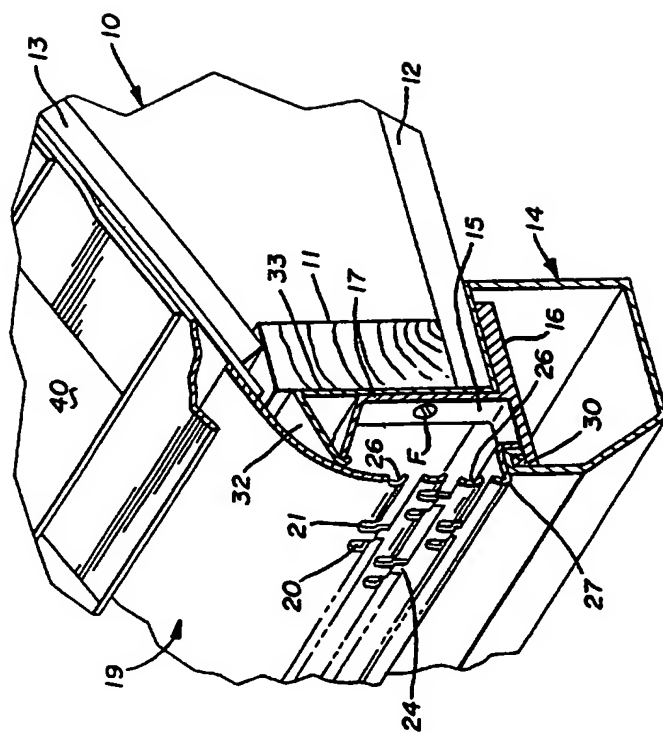


FIG. 5

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